

REMARKS

Claims 1-24 are pending in the present application. Reconsideration and allowance of the claims is respectfully requested in view of the following remarks.

1. Claim Rejections Under 35 U.S.C. §102

Claims 1, 2, 11-13, 15 and 21 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,048,645 to Saidi et al. The Examiner has stated that Saidi discloses an electrochemical cell comprising a positive electrode, a negative electrode, an electrolyte and a separator. According to the Examiner, the positive electrode of Saidi et al. comprises a current collector and “an active material selected from the group consisting of manganese dioxide.” (Page 2 of the Office Action.) Applicants disagree.

Saidi et al. disclose a lithium ion battery that comprises “a positive electrode having an active material comprising lithium-rich manganese oxide tetragonal structure $\text{Li}_2\text{Mn}_2\text{O}_4$ of the invention” (Col. 2, lines 46-49). As discussed in Col. 3, lines 15-47, manganese dioxide is a precursor to the disclosed active material which must be combined with lithium carbonate and subjected to several heating steps (Col. 3, line 15 to Col. 4, line 29) to obtain the active material. Saidi et al. state at Col. 5, lines 62-63 that “ $\text{Li}_2\text{Mn}_2\text{O}_4$ is prepared chemically, in a chemical reaction.” Thus, it is clear that the active material of Saidi et al. is $\text{Li}_2\text{Mn}_2\text{O}_4$, and not manganese dioxide. Saidi et al. do not teach or suggest that manganese dioxide can be employed as the active material in the positive electrode.

In contrast, the pending claims are directed to an asymmetric capacitor comprising a positive electrode, a negative electrode, an electrolyte and a separator plate. The positive electrode comprises a current collector and an active material selected from the group consisting of manganese dioxide, silver oxide, iron sulfide and mixtures thereof.

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Applicants respectfully point out that Saidi et al. do not provide adequate basis for a rejection under 35 U.S.C. §102(b) because Saidi et al. do not contain all elements of Claim 1, namely manganese dioxide as the active material in the positive electrode. Therefore, Applicants earnestly request reconsideration and allowance of Claims 1, 2, 11-13, 15 and 21.

2. Claim Rejections Under 35 U.S.C. §103

Claims 3-4, 8, 10, 14, 16-20, and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Saidi et al. in view of U.S. Patent No. 5,953,204 to Suhara et al. Claims 5-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Saidi et al. in view of Suhara et al. and U.S. Patent No. 6,031,711 to Tennent et al. In particular, the Examiner has indicated that Saidi et al. discloses all limitations of the rejected claims except for the limitation of the current collector being selected from the group consisting of metal foil, metal mesh, electrically conductive polymer composites and expanded metal. Suhara et al. has been cited for teaching that current collectors can be made of metal foil. Tennent et al. has been cited for disclosing carbon fibers less than 10-100 nanometers in diameter.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). As discussed above, Saidi does not teach or suggest manganese dioxide as an active material. Neither Suhara nor Tennent remedies this deficiency. In fact, the positive electrode of Suhara employs a polarizable material composed mainly of activated carbon and there is no mention of manganese dioxide. Because neither Saidi, Suhara nor Tennent disclose manganese dioxide as an active material for the positive electrode not all elements of the claims are found in the cited art and a prima facie case of obviousness has not been established. Applicants respectfully request withdrawal of the rejection of Claims 3-8, 10, 14, 16-20, and 22-24 under 35 U.S.C. §103(a).

Claim 9 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Saidi et al. in view of U.S. Patent No. 5,415,959 to Pyszczeck et al. Pyszczeck et al. has been cited to provide the element of carbonaceous active material as a non-woven mat. Pyszczeck et al. discloses a fabric separator for use in an electrochemical cell comprising an anode (negative electrode) made of metals from Groups IA, IIA, and IIIB of the Periodic Table such as lithium and a cathode (positive electrode) that may be made of manganese dioxide, iron sulfide or other metal compounds. The anodic material typically comprises a thin sheet of foil. (Col. 4, lines 10-33)

As discussed above, Saidi discloses $\text{Li}_2\text{Mn}_2\text{O}_4$ as the active material for the positive electrode. The negative electrode may be metallic lithium but is preferably is an intercalation active material such as metal oxide or graphite. (Col. 9, lines 27-41) Saidi does not disclose the use of manganese dioxide, silver oxide, iron sulfide and mixtures thereof as active material in the positive electrode as claimed in the pending application. Although Pyszczeck et al. has been cited for its teaching regarding a separator comprising a non-woven mat, Pyszczeck et al appears also to provide the element of manganese oxide as active material for the positive electrode.

An Examiner cannot establish obviousness by locating references that describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would have impelled one skilled in the art to do what the patent applicant has done. *Ex parte Levengood*, 28 U.S.P.Q. 1300 (Bd. Pat. App. Int. 1993). The references, when viewed by themselves and not in retrospect, must suggest the invention. *In Re Skoll*, 187 U.S.P.Q. 481 (C.C.P.A. 1975).

Saidi et al. disclose only one useful active material for the positive electrode, $\text{Li}_2\text{Mn}_2\text{O}_4$. Saidi et al. do not teach or suggest that any other material would be useful as the positive electrode active material. Similarly, Pyszczeck et al. does not teach or suggest that manganese dioxide or iron sulfide can be used in place of $\text{Li}_2\text{Mn}_2\text{O}_4$ or in combination with a negative electrode comprising carbonaceous active material. Therefore Applicants respectfully assert that there is no motivation to combine the positive electrode active material of Pyszczeck et al with Saidi et al. and the claimed invention is non-obvious.

Applicants respectfully request withdrawal of the rejection of Claim 9 under 35 U.S.C. §103(a).

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by the Applicants' attorneys.

Respectfully submitted,

LIPKA ET AL.

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